

## CLAIMS

1. A method of deriving location information about a first entity forming one endpoint of  
5 an actual or potential communication path at the other end of which is a second entity, the  
path extending at least in part through a fixed communications infrastructure, said method  
comprising the steps of:
- (a) identifying one or more intermediate nodes that lie along said path and are internal to  
the fixed communications infrastructure;
  - 10 (b) accessing information about the geographic significance of at least one said  
intermediate node when considered in a direction along said path towards said first  
entity; and
  - (c) using the geographic significance information accessed in step (b) to provide said  
location information about the first entity.
- 15 2. A method according to claim 1, wherein the geographic significance information of a  
said intermediate node comprises information that takes account of at least one of the  
following parameters:
- (i) the identity of a downstream intermediate node,
  - 20 (ii) the identity of an upstream intermediate node,
  - (iii) the second entity;
- step (b) involving accessing the geographic significance information on the basis of at least  
one of the foregoing parameters.
- 25 3. A method according to claim 2, wherein geographic significance information taking  
account of parameter (i) is available and is preferentially used to obtain the geographic  
significance information for step (c) in cases where an upstream intermediate node has  
been identified in step (a).
- 30 4. A method according to claim 1, wherein steps (a) and (b) taken together result in the  
accessing of geographic significance information on the intermediate node which is closest  
to the first entity and for which such information exists.

5. A method according to claim 1, wherein said second entity is a service system contacted by the first entity, the second entity carrying out steps (a) to (c).
- 5 6. A method according to claim 1, wherein the first entity is a mobile entity and the second entity is a service system.
7. A method according to claim 1, wherein the second entity uses the geographic significance information obtained in step (c) to initiate further location determination steps  
10 in respect of the first entity.
8. A method according to claim 1, wherein said path is at least in part through an IP network and step (a) is effected by causing time-to-live timeouts at successive nodes along the path.
- 15 9. A method according to claim 1, wherein the first entity is a mobile entity with cellular radio capability and said path extends from the first entity, over a cellular radio infrastructure and through a gateway, this gateway forming a said intermediate node.
- 20 10. A method according to claim 1, wherein the communication path is one of a data path for load data and/or signaling data.
11. A method of discovering geographic significance information about nodes in a communications infrastructure, comprising the steps of:
- 25 (a) deriving location data about a first entity forming one endpoint of an actual or potential path through the communications infrastructure to a second endpoint entity;
- (b) identifying one or more intermediate nodes along said path;
- (c) associating the location data with the or each said intermediate node;
- (d) repeating steps (a) to (c) multiple times for different first-entity locations and  
30 thereafter consolidating for each node, the associated location data into location zone data constituting said geographic significance data for the node.

12. A method according to claim 11, wherein step (c) involves for each node with which location data is associated, noting the identity of any upstream/downstream node along said path towards the first entity; step (d) providing the location zone data for the node for access according to upstream/downstream node.

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13. A system for deriving location information about a first entity forming one endpoint of an actual or potential communication path at the other end of which is said system, the path extending at least in part through a fixed communications infrastructure, the system comprising:

- 10     - a data store holding information about the geographic significance of internal nodes of the fixed communications infrastructure, with respect to directions of traversal of the nodes;
- a node-discovery subsystem for identifying one or more said nodes that lie along said path intermediate the system and the first entity; and
- 15     - a data-processing subsystem operative to look up, in the data store, geographic significance information regarding at least one said intermediate node identified by the node discovery subsystem, the geographic significance information concerned relating to a direction of traversal of the node in a direction along said path towards said first entity and this information being used by the data-processing to provide
- 20     said location information about the first entity.

14. A system according to claim 13, wherein the geographic significance information of a said intermediate node comprises information that takes account of at least one of the following parameters:

- 25     (i) the identity of a downstream intermediate node,
- (ii) the identity of an upstream intermediate node,
- (iii) the second entity;

the data-processing subsystem being operative to look up the geographic significance information on the basis of at least one of the foregoing parameters.

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15. A system according to claim 13, wherein said path is at least in part through an IP network and the node-discovery subsystem is operative to effect node discovery by causing

time-to-live timeouts at successive nodes along the path.